NUECES BBASC STUDY #1

RE-EXAMINATION OF THE 2001 AGREED ORDER MONTHLY TARGETS AND SAFE YIELD VERSUS CURRENT DEMAND EVALUATIONS

NEAC – JUNE 22, 2015
CORY SHOCKLEY

DISCUSSION

01 **Results**

02 **Schedule**

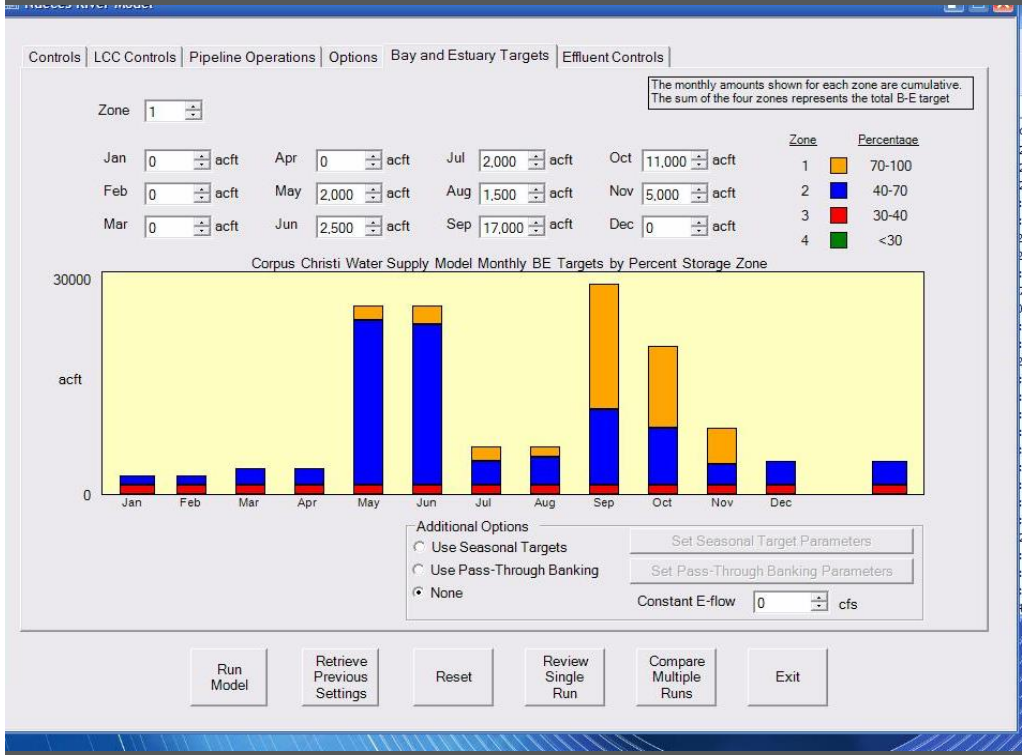
GOALS

- Determine if a “shift” has occurred in the inflows to the Bay and CCR/LCC System and what impact this “shift” may have on Safe Yield and FWI to the Bay.

- Compare the results from a Safe Yield Demand of 205,000 acft/yr to a current demand of 133,000 acft/yr on FWI to the Bay.

TASK 1 – CCWSM SIMULATION

- CCWSM Simulations
  - Shifting of targets
    - Keep overall annual target volume the same
    - Impact to Bay FWI
    - Impact to Safe Yield
  - Three different scenarios
    - Uniform; MJJ; AMJJAD
  - +2.5% change in Safe Yield
  - -1.2% change in mean annual bay inflow



TASK 1 - CONCLUSIONS

Variable	Jan-ST	Jan-R	Feb-ST	Feb-R	Mar-ST	Mar-R	Apr-ST	Apr-R	May-ST	May-R	Jun-ST	Jun-R
Precipitation	↔	↑	↔	↔	↑	↔	↔	↓	↓	↓	↔	↔
Streamflow	↔	↓	↔	↔	↓	↓	↓	↔	↓	↔	↓	↓
QNAT	↔		↑		↑		↔		↔		↓	
Trend	No Change		No Change		No Change		Drier		Drier		Drier	

Variable	Jul-ST	Jul-R	Aug-ST	Aug-R	Sep-ST	Sep-R	Oct-ST	Oct-R	Nov-ST	Nov-R	Dec-ST	Dec-R
Precipitation	↔	↑	↓	↓	↓	↑	↓	↓	↔	↔	↔	↓
Streamflow	↔	↔	↓	↔	↔	↓	↔	↑	↔	↓	↓	↓
QNAT	↑		↔		↔		↓		↔		↔	
Trend	No Change		Drier		No Change		No Change		No Change		Drier	

- Seven months show no significant trend
- Five months show a drier trend
  - May, June being the most significant
  - Drier trending months tend to be some of the higher target months in the Agreed Order
- No wetter trend months proved to be significant
- Drier trends do not suggest lowering targets
- Targets are not a significant driver for safe yield; inflows are
- Increases in safe yield generally result in reduction to mean annual FWI

TASK 2 – CONCLUSIONS

- Lower demand = higher lake levels = more opportunity for larger pass-throughs
- The lower demand scenario does not result in significantly higher attainment frequencies (months and volume) of FWI to the bay during dry times.
- The concern that a safe yield demand will significantly reduce FWI to the bay over those generated under a current demand scenario does not materialize in the analysis.
  - The FWI are driven by inflows and since the droughts in the Nueces are characterized by limited to no inflows at times, the inflows are the real drivers not demand or system storage level.

RECOMMENDATIONS

- Additional studies looking at adaptive management opportunities should be considered for future updates to the Agreed Order.
  - Dynamic targets versus the current static targets
  - Seasons versus months
  - Zone shifts
- The CCWSM hydrology should be updated to better evaluate system operations considering current hydrology.
  - This would also allow for the trend analysis to be completed for the QNAT beyond 2003.

SCHEDULE

- Draft report due June 30, 2015
  - Will be submitted to TWDB this week
  - Provided to reviewers
    - Jace Tunnell
    - Rocky Freund
    - Brent Clayton
    - Jim Tolan
    - Rae Mooney
- Final report due August 2015


RINCON BAYOU
CBBEP Nueces Delta Preserve